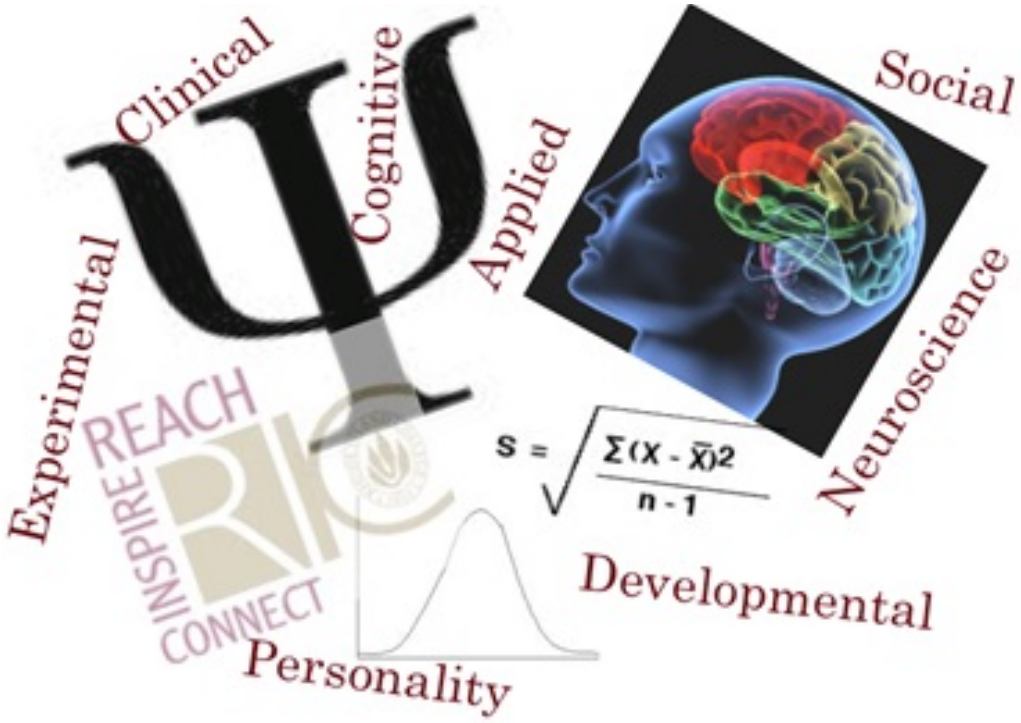
PSYC202: Research Methods

Marcus Cappiello

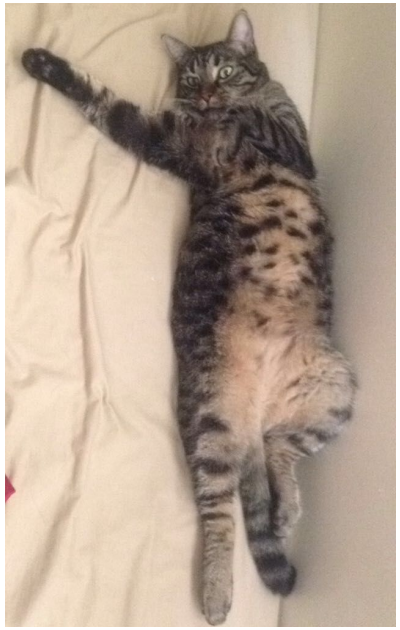


Introductions

- Name
- Year
- Major
- Something you like that starts with the first letter of your first name.

Introductions

- Professor: Marcus Cappiello
  - 6th year grad student in cognitive psychology
- Intermission entertainment: Daisy and Fiddler



Tips for higher education

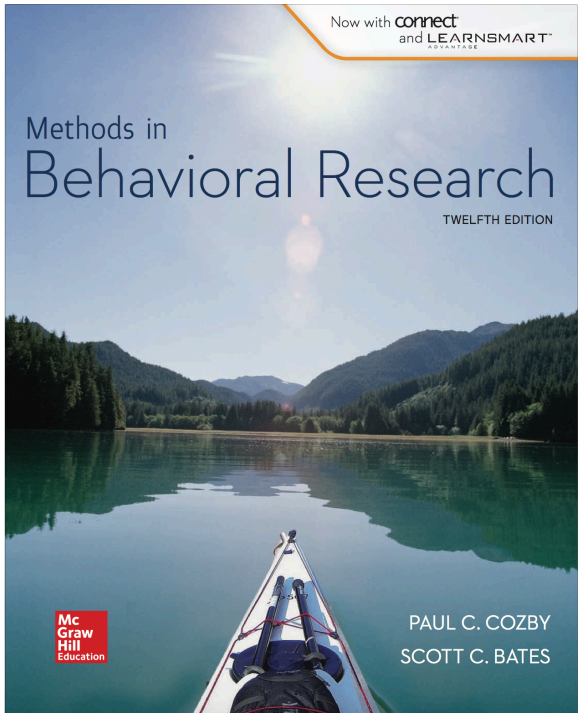
1. Sleep more than you study
2. Study more than you party
3. Party as much as possible

Tips for getting into grad school

- GPA and GRE scores only matter to a point
- Most important:
  1. Fit to the lab
     - Show interest in the lab material
     - Why would you be a good addition?
  2. Lab experience
     - Join a lab as soon as possible
  3. Letters of recommendation
     - One for you're lab experience
     - One from a professor (whose class you did well in)

Textbook

- Methods in Behavioral Research
  - Paul Cosby



Course structure

All information can be found on the course website:
https://marcuscappiello.github.io/teaching/PSYCH202/f19.html

Lab/research assignments	20%
Midterm	20%
Final	30%
Term Paper	30%

- Lab/research assignments may be given either Tuesday or Wednesday
- Midterm and final – readings and lecture
- Term Paper – research proposal

Think, pair, share

- Each lecture there will be at least one TPS
- I will provide a prompt/question
  - Think about it on your own first (no talking)
  - Get together in a small group (min 2 in a group) and discuss what you think
  - Share with the class (included in your participation)

SCIENCE

- Simple idea: we should support claims with evidence!
  - Visual imagery mimics perception
    - Run and experiment
  - Waiting for difficult news is helped by support from friends
    - Observe people waiting
  - Cats are the cutest animal
    - Take a survey

Theory, Hypotheses and predictions

- Theory
  - A systematic body of ideas about a topic or phenomenon
- Hypothesis
  - Based on a theory, come up with a *testable* idea or question

Experiment

- Qualitative – observational, no statistics
  - Group discussions
  - Interviews
  - Small sample size
- Quantitative – experimental, run statistics
  - Need at least two conditions, one *experimental* condition and one *control* condition
  - Large sample size

Experiment

- Between subject comparison
  - Two separate groups for the control and experimental conditions
    - Ex: Group A gets a new medicine, group B gets a placebo
- Within subject comparison
  - Same subjects participate in both conditions
    - Ex: Each participant takes a memory test underwater and in a classroom

Think, pair, share

- Come up with an experiment to test the following hypothesis:
  - Having one or more pets will improve your memory.

Experiment Tips

- Your experimental and control conditions should be as close as possible
  - Only difference is something that answers your question
  - Ex: ideal medical trial
    - Twins, give one drug and other placebo

Experiment Tips

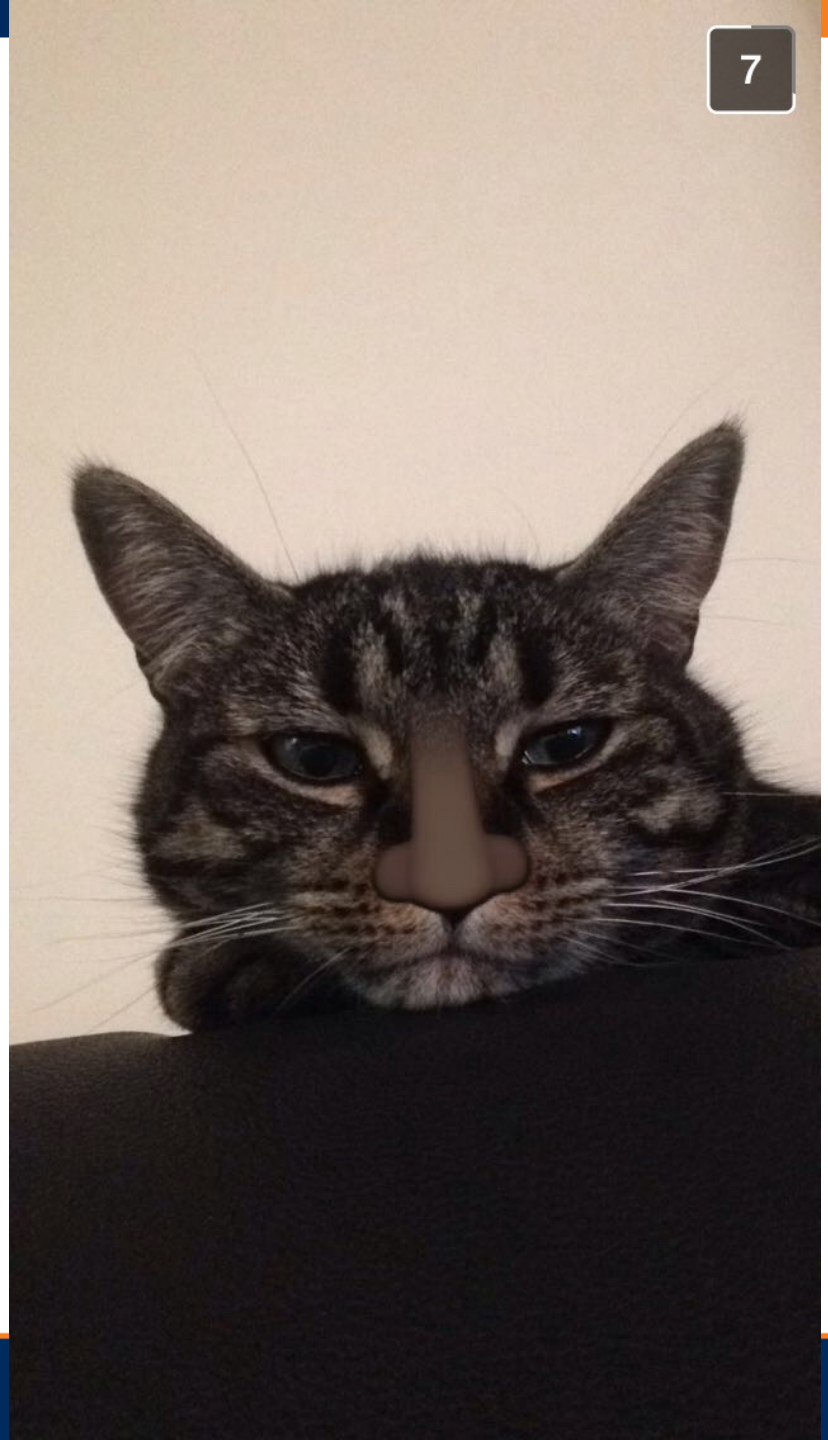
- Observer-expectancy effect
  - Researcher's bias influences the participants in the study
- Double blind
  - Both experimenter and subject don't know which condition a participant is in
  - Avoids experimenter bias

Research article

- Once your experiment has been run, share it with the world
  - Peer review process: experts in the field will critique it so it may be improved
- Very concise and clear

Research article

- Abstract
- Introduction
- Method
- Results
- Discussion
- References
- Tables/figure captions/figures



Treatment of Human Subjects
History

- Nuremburg Code, 1949
  - First set of ethical codes for research on humans
- Declaration of Helsinki, 1964
  - 18th World Medical Assembly
  - Provided guidelines for the welfare of human subjects in medical research studies
- The Belmont Report, 1979

Milgram's Obedience Experiment

- Yale University 1963, 1964, 1965
- "teacher" vs. "learner"
- "shock machine" from 15 to 450 volts

Institutional Review Board (IRB)/ Human Subjects Committee

- Committees
- IRB training/ IRB approval for studies
  - Proposals, pilots and experiments
- Do no harm

Institutional Review Board
Informed consent

- Based on Belmont Report--Three ethical principles
- Beneficence
  - Risks and benefits, 'Do no harm'
- Respect for persons (autonomy)
  - Informed consent
- Justice
  - Fair distribution of cost-benefits to subjects

Informed consent

- Name of investigator(s)
- Purpose and description of study
  - Including where conducted and how much time required to participate
- Participation is
  - Voluntary
  - Can be withdrawn at any time
- List of costs and benefits
- Name of someone who can answer questions about research

Informed consent (con't.)

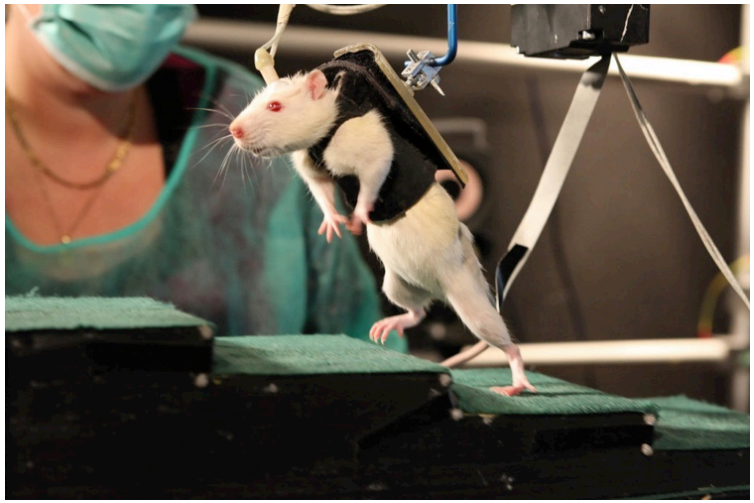
- Confidentiality will be protected
- Signature and witness to signature
- Parent/guardian/caregiver signature if needed

Research with human participants

- Institutional approval
- Informed consent
- Consent for audiotape and images
- Special populations
- Foregoing informed consent
- Inducements to participate
- Deception
- Debriefing

Research with animals

- Acquisition, care, use, and disposal under state and federal regulations
- All procedures supervised by trained personnel
- Discomfort minimized



Other considerations

- Fraud
  - Dr. Suk
  - http://www.liveleak.com/view?i=5cf_1256201808
- Plagiarism
- Conflicts of interest

RichardBH, flickr